

Serial No.: 09/992,880

Filing Date: November 5, 2001

Attorney Docket No. 125.014US01

Title: INTEGRATED CIRCUIT WITH MOS CAPACITOR

forming an oxide layer on a surface of a substrate, the substrate having a plurality of isolation islands, wherein at least one isolation island is used in forming a semiconductor device of the integrated circuit;

patterning the oxide layer to expose predetermined areas of the surface of the substrate;

depositing a dielectric layer overlaying the oxide layer and the exposed surface areas of the substrate, wherein the dielectric layer has a higher dielectric constant than a dielectric constant of the oxide layer, further wherein the dielectric layer is in contact with the oxide layer and all of the exposed surface areas created by the patterning of the oxide layer;

implanting ions through the dielectric layer;

diffusing the ions to form device regions in selected isolation islands in the substrate; and

using the dielectric layer in at least one of the isolation islands as a capacitor dielectric in forming a capacitor.

23. (Amended Once) A method of forming an integrated circuit, the method comprising:

forming a first oxide layer on a surface of a substrate, the substrate having a plurality of isolation islands, wherein at least one isolation island is used in forming a semiconductor device of the integrated circuit;

patterning the first oxide layer to expose predetermined areas of the surface of the substrate;

implanting and diffusing ions into the substrate to form device regions;

forming a dielectric layer overlaying the oxide layer and the exposed areas of the surface of the substrate, wherein the dielectric layer has a dielectric constant higher than a dielectric constant of the oxide layer, further wherein the dielectric layer is in contact with the oxide layer and all of the exposed surface areas created by the patterning of the oxide layer; and

using the dielectric layer in at least one of the isolation islands as a capacitor dielectric in forming a capacitor.

27. (Amended Once) The method of claim 25, wherein a non-selective etch is used to expose the surface of the substrate adjacent device regions before the dielectric layer is formed.

Serial No.: 09/992,880

Filing Date: November 5, 2001

Attorney Docket No. 125.014US01

Title: INTEGRATED CIRCUIT WITH MOS CAPACITOR

---

28. (Amended Once) The method of claim 27, wherein the non-selective etch uses a wet etchant containing hydrogen fluoride.

---